GenePANDA—a novel network-based gene prioritizing tool for complex diseases

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Supplementary Table S1

Top 10 predicted genes whose association with obesity have been reported recently		
Gene	**Rank**	**Literature Experimental Evidence Pubmed ID**
GCG	1	26186884
GAL	2	26172564
SST	3	25956467
KNG1	4	NA
CPB2	5	NA
GCK	6	26132169
LEPR	7	26365669
IAPP	8	26398307
PPY	9	26612764

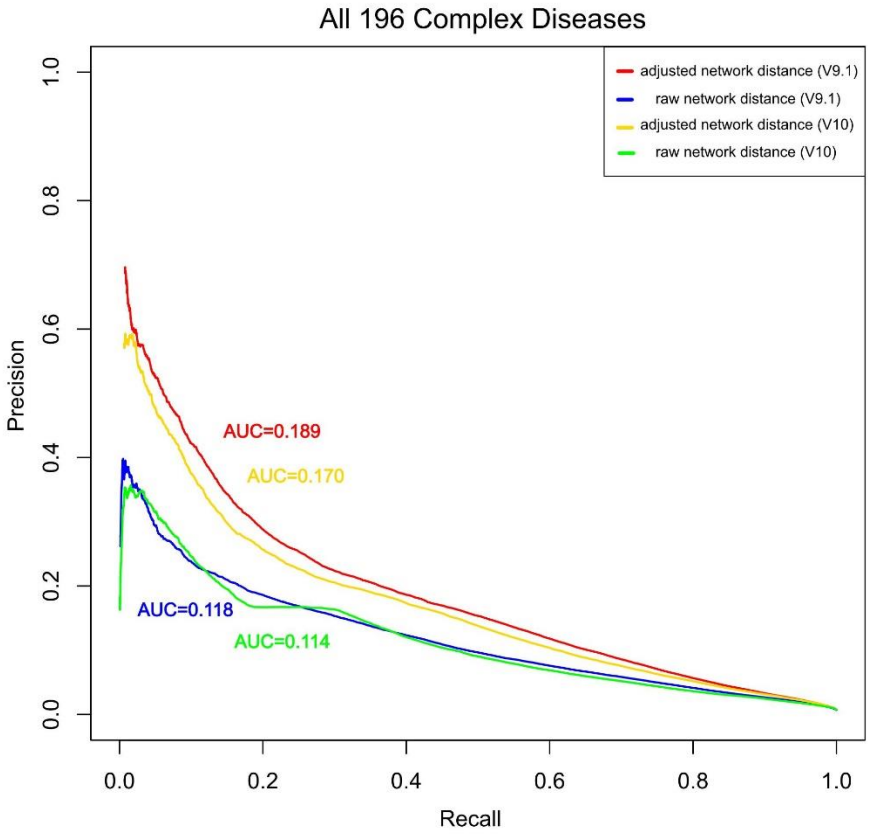
PNPLA2	10	26500201
Top 10 predicted genes whose association with diabetes have been reported recently		
Gene	**Rank**	**Literature Experimental Evidence Pubmed ID**
PRO2044	1	NA
POMC	2	26930171
NOS3	3	25477161
PRL	4	26299069
TTR	5	25781688
SST	6	26589890
TGFBI	7	24728038
SCARB2	8	NA
AGT	9	26380312
REN	10	26569322
Top 10 predicted genes whose association with breast cancer have been reported recently		
Gene	**Rank**	**Literature Experimental Evidence Pubmed ID**
POLD1	1	27022290
BIRC5	2	26372358
FOS	3	26536102
RFC5	4	NA
ATR	5	26319584
CHK2	6	26025911
RFC4	7	NA
RFC3	8	NA
SP1	9	26645832
GADD45B	10	25840970

Supplementary Table S2

Rank Ratio of 42 Novel Associations by 4 Methods				
	Candid	Endeavour-GW	Pinta-GW	GenePANDA
ACAD9	33.45	1.53	31.53	8.14
ATF7IP	1.38	49.88	58.21	35.48
BCL3	60.27	4.74	10.76	9.89
BRCA2	1.37	1.25	0.29	8.50
C20orf54	67.5	95.54	95.04	0.17
CD320	80.54	46.95	26.41	0.05
CHST14	61.64	7.57	25.8	0.26
CRHR1	15.04	13.35	12.94	11.87
CSF1R	2.93	1.67	2.69	2.65

DAB2IP	14.2	26.4	21.03	26.80
DISP1	2.26	32.85	93.23	7.23
DMRT1	41.83	79.04	29.94	8.76
EZH2	4.66	34.43	23.41	4.69
FUT2	47.67	42.43	19.74	14.30
G6PC3	47.72	18.72	51.22	71.53
GABRR1	17.43	15.97	11.75	12.66
GLIS3	7.92	2.25	0.76	29.54
HCCS	25.85	2.75	10.78	89.21
HTR7	17.7	0.56	1.73	5.18
IFNG	47.19	1.21	0.21	0.16
IL10	13.22	26.26	0.18	0.24
LPP	74.55	6.93	17.62	2.87
MECOM	11.6	15.89	30.24	11.71
MMEL1	25.2	39.37	18.32	6.49
PLCE1	10.45	13.03	42.6	13.04
PQBP1	22.51	16.74	34.79	83.61
RANBP1	7.32	46.07	48.2	91.66
RUNX2	1.79	3.07	0.18	0.11
SDCCAG8	78.11	5.23	0.85	0.12
SH2B1	3.53	10.82	12.64	12.02
SOX17	74.67	15.08	1.11	1.82
SPIB	5.56	10.28	30.44	24.71
STOM	26.54	6.52	22.72	22.06
TBX2	31.34	1.87	1.34	1.87
TNFRSF19	5.74	36.09	21.24	10.81
TP63	7.04	1.35	11.67	5.50
TRAF3IP2	2.05	39.04	23.1	9.69
TRAF6	0.13	16.54	8.11	1.81
UBE2E2	51.18	17.38	61.89	69.03
UBE2L3	49.17	71.21	6.34	33.65
UTRN	18.51	0.46	2.99	1.08
WDR62	29.98	23.35	63.97	0.01

Supplementary Figure S1



Supplementary Figure S1: Prediction performance of GenePANDA on 196 diseases on adjusted and raw network distance based on STRING v9.1 and STRING v10.